# *Working for Water*: Removing Alien Plants in South Africa

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*Lois Sweet*

[Photo: More than 42,000 South Africans are employed by the *Working for Water* program.]

Ayliff Nasayi Madlokazi was only 18 when he witnessed what turned out to be an historic event. The year was 1928 and he was in the company of the person who planted the first wattle tree in South Africa. The Australian wattle, it was hoped, would provide fuel, building materials, and shade.

"The wattle intruded like flies and spread towards the [local] indigenous forest," says Madlokazi. "But because we regarded this tree as the best for shade, we took no notice of it. Later, though, it flourished near the Gxulu River, infesting the Mnyameni area. At the same time, it suppressed the growth of natural vegetation."

**Invasive species**

Today, the wattle is designated an "invasive alien plant." It shares this label with approximately 110 of the almost 750 tree species and 8,000 shrubby and herbaceous species that were brought into South Africa from countries as far afield as North America, South and Central America, Australia, Europe, and Asia. Many of these alien species adjusted well, conforming both to the natural environment and the purpose for which they were introduced — as crop species, garden ornaments, barrier and hedge plants; to stabilize sand dunes; and for timber and firewood.

But the invasive plants have created a huge problem, adversely affecting more than 8% of the country. Because they have no natural enemies, they out-compete indigenous species. They spread at alarming rates, impede the growth of natural vegetation, and destabilize the ecological balance by increasing the intensity of wildfires and soil erosion. In many areas, thickets of alien plants have converted valuable agricultural land into unproductive wasteland.

**Incredibly thirsty**

Worse, many invasive alien plants are incredibly thirsty. The result is dramatically reduced ground water levels, and dried-up rivers and streams.

These are serious problems, particularly in a country like South Africa that suffers from a long-term, chronic water problem. Acute droughts occur there regularly and more than 12 million South Africans lack access to potable water. Yet, it is estimated that invading aliens cover 10 million hectares of land and, each year, use 3.3 billion cubic metres more water than native vegetation.

**Conservation program**

In response, the Government of South Africa's Department of Water Affairs and Forestry created a conservation program called *Working for Water* in 1995. This program supports a variety of labour-intensive projects to eradicate invasive alien plants, which involve mechanical methods (felling, removing, or burning invasive alien plants), chemical methods (such as environmentally safe herbicides), and biological control (using species-specific insects and diseases from the alien plant's country of origin).

While the main goal of this initiative is to recover scarce water, other components include the conservation of biological diversity, and the building and empowerment of local communities through job creation. Today, more than 42,000 people are employed by the program.

**Social initiatives**

In South Africa — where poverty, unemployment, and illiteracy abound — the social component is particularly important. *Working for Water* targets youth and the disabled, and emphasizes racial and gender equity. Beyond creating jobs, it develops skills that empower people to become independent contractors in the future. Employees are trained in machine operation, driving motor vehicles, first aid, personal financial management and supervision — as well as in the principles of resource conservation and environmental awareness. Moreover, a concerted effort has been made to enhance community structures such as day care centres, community halls, and local sporting facilities. Today, virtually all of the projects provide equipment and subsidize food costs at the day care centres, thereby improving the nutritional level of workers' children.

*Working for Water* operates in conjunction with a range of partner organizations, one of which is the Centre for Scientific and Industrial Research (CSIR) based in Stellenbosch, north of Cape Town. Since January 1997, the International Development Research Centre (IDRC) has been supporting *Working for Water* research conducted at CSIR's Water, Environment and Forestry Technology division. Researchers there are looking for ways to boost the program's benefits and address critics concerns that the program will reduce the economic benefits provided by some alien plants, such as black wattle — a species logged in South Africa.

**Research areas**

"We're looking at three interlinked and under-researched areas that [are] in particular need of further investigation," says Caroline Gelderblom, an ecologist with CSIR. "These include evaluating the social and economic benefits of the program, establishing guidelines for rehabilitation, and analysing the costs and benefits of the South African black wattle industry in the context of the program's activities." The results, she stresses, should prove invaluable.

"The socio-economic studies will recommend appropriate social goals, result in research that will be used to enhance program management, and provide the opportunity to establish a culture of monitoring and evaluating social objectives," she explains. "The rehabilitation studies will help to develop operational guidelines for rehabilitating those areas where clearing may lead to increased erosion."

**Economics study**

Finally, "the economics study of the black wattle will clear up the misunderstandings between the water conservation camp, and those in the forestry industry. And results will help policy makers formulate a strategy for managing this species in the future," says Gelderblom.

For Leonard Arends, however, program benefits exist in the here-and-now. "People who would be hard-pressed to get work elsewhere are working," says the *Working for Water* staff trainer. "And they're learning new things and growing. All this, while eradicating South Africa's green cancer."

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